



Technical Assistance Project: Excluded PCB Products

Office of Environmental Policy and Assistance, RCRA/CERCLA Division (EH-413)

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Summary

At the U.S. Department of Energy (DOE), the Office of Environmental Policy and Assistance (EH-41) works with DOE field elements and the U.S. Environmental Protection Agency as a team to comply with regulations pertaining to polychlorinated biphenyls (PCBs).

Over the past few years, there has been a series of inquiries throughout the DOE complex about the applicability of the Excluded PCB Product Rule. The applicability of this particular rule becomes important as more DOE sites transfer or dispose of materials and equipment containing excluded PCB products. The earliest inquiry concerned (1) electric wire and cable and (2) machine tools. The most recent inquiry was from the Savannah River Site (SRS) concerning the applicability of this rule to surplus PCB-painted machinery to be sold under the site's economic development plan.

The purpose of this Technical Assistance Project is to highlight the issues that have emerged in inquiries about the applicability of the Excluded PCB Product Rule and discuss how they have been resolved in a cooperative process with EPA. The applicability of this rule has far-reaching consequences for the continued use, demolition and disposal, sale, salvage, and transfer of property across the DOE complex.

Background

According to 40 CFR 761.3, excluded PCB products means materials containing polychlorinated biphenyls (PCBs) at concentrations less than 50 parts per million (ppm), including but not limited to:

- (1) "Non-Aroclor* inadvertently generated PCBs as a byproduct or impurity resulting from a chemical manufacturing process."
- (2) "Products contaminated with Aroclor or other PCB materials from historic PCB uses (e.g., investment casting waxes)."
- (3) "Recycled fluids and/or equipment contaminated during use involving the products described in paragraphs (1) and (2); examples are fluids and equipment for heat transfer and hydraulic uses."

- (4) "Used oils."

For any of the above materials to be an excluded PCB product, it must also meet the three following criteria:

- (a) Products (or source of the products) were legally manufactured, processed, distributed in commerce, or used before October 1, 1984; or
- (b) After October 1, 1984, products (or source of the products) were manufactured, processed, distributed in commerce, or used pursuant to authority granted by regulation, by exemption petition, by settlement agreement, or pursuant to other approved programs; and
- (c) The resultant PCB concentration (i.e., below 50 ppm) is not the result of dilution or of leaks or spills of PCBs in concentrations over 50 ppm.

The Excluded PCB Product Rule [40 CFR 761.1(f)(4)] states that products containing excluded PCB products, as previously defined, are exempt from the regulations (40 CFR 761, Subpart B) dealing with manufacturing, processing, distribution in commerce, and use of PCBs.

History

Due to public concerns, Congress mandated that PCBs be regulated under the Toxic Substances Control Act (TSCA), Public Law 94-469 of October 11, 1976. The first PCB regulations were promulgated under 40 CFR Part 761 in 1978; these regulations covered disposal and marking. Next, the PCB Ban Rule was promulgated on May 31, 1979. The rule bans the manufacture, processing, distribution in commerce, and non-totally enclosed use of PCBs at concentrations of 50 ppm and above. PCBs of less than 50 ppm were excluded from regulation.

The Environmental Defense Fund successfully challenged this general 50 ppm cutoff in a lawsuit. On October 30, 1980, the U.S. Court of Appeals for the District of Columbia Circuit (636 F.2d 1267) remanded the provision of the rule excluding PCBs of less than 50 ppm from

· regulation. In response to the Court, PCBs of
· less than 50 ppm were regulated in two rules:
· Closed and Controlled Waste Manufacturing
· Process Rule (47 FR 46980) issued on October
· 21, 1982, and Uncontrolled Rule (49 FR 28172)
· issued on July 10, 1984. The latter rule left in
· place a ban on all activities involving quantifi-
· able amounts of PCBs unless the activity was
· specifically excluded, exempted, or authorized.

· Many activities involving low concentrations of
· PCBs were prohibited even if they posed no or
· minimal risk to human health or the environ-
· ment. Several industries filed petitions seeking
· judicial review of the Uncontrolled Rule of July
· 10, 1984. In recognition of the concerns of the
· petitioners, a settlement agreement was reached
· in August 1986. In 1987, in accord with the
· settlement agreement, a rule was proposed to
· exclude from regulation certain PCBs of less
· than 50 ppm based on the U.S. Environmental
· Protection Agency's (EPA's) determination that
· such PCBs do not pose an unreasonable risk of
· harm to human health or the environment.
· These PCBs became known as excluded PCB
· products (as defined above), and the proposed
· rule became known as the Excluded PCB
· Product Rule. This rule was promulgated as
· part of a larger rule, the "Exclusions, Exemp-
· tions, and Use Authorizations Rule" (53 FR
· 24206) of June 27, 1988.

· **Authorizations & · Exemptions**

· Besides an exclusion (such as the Excluded PCB
· Product Rule), other exceptions to the PCB Ban
· Rule may be approached through authoriza-
· tions or exemptions. The process of obtaining
· an authorization involves rulemaking. During
· the rulemaking, initiated by EPA, a determina-
· tion must be made that there is no unreasonable
· risk of injury to human health or the environ-
· ment from the activity involving the subject
· PCBs. The end result of the rulemaking is a
· promulgated regulation that authorizes the
· activity (manufacture, processing, distribution
· in commerce, and/or use) involving the subject
· PCBs in other than a totally-enclosed environ-
· ment.

· The other approach to gaining an exception
· to the PCB Ban Rule is an exemption. In this
· case, EPA is petitioned to initiate the rule-
· making process. EPA will promulgate an
· exemption from the PCB Ban Rule if informa-
· tion is provided to show that two statutory
· criteria are met:

- (1) No unreasonable risk of injury is posed to human health or the environment, and
- (2) Good faith efforts have been made to develop a substitute for PCBs.

An exemption must be renewed annually while an authorization is valid for any time period EPA deems appropriate.

Electric Wire and Cable

In 1994, EPA worked with DOE to resolve the applicability of the Excluded PCB Product Rule to electric wire and cable. A building was about to be demolished when electric wire and cable were found that were suspected of containing PCBs. One type of cable was found to contain no greater than 8.5 ppm PCBs in the insulation. However, there was no information about the other types of electric wire and cable or about whether the sampling of the one type was representative of all the electric wire and cable. The field element queried the extent to which the wire and cable were covered by the Excluded PCB Product Rule.

First of all, EPA resolved for DOE that the Excluded PCB Product Rule does not apply in this case because the cable and wire were destined for disposal. The Rule applies only to manufacturing, processing, distribution in commerce, or use, not to disposal.

When consulted by DOE, EPA determined (Baney, 1994) that in order to evaluate whether the electric wire and cable contained PCBs regulated for disposal, more information was needed. EPA noted that it does not have an interpretative policy for sampling or characterizing PCB concentration in electric wire and cable. Nonetheless, EPA pointed out that a procedure had been developed to characterize PCBs in the insulation from cables of submarines. The procedure involves aggregating the non-metal parts, pulverizing these parts, and subjecting extracts to the Toxicity Characteristic Leaching Procedure (TCLP). In addition, EPA added that the EPA Regional Administrator may be willing to approve a characterization procedure as part of a disposal approval or enforcement agreement.

Notwithstanding the Excluded PCB Product Rule, EPA pointed out for DOE's benefit that no characterization would be needed to smelt the wire or to dispose of the wire in a TSCA-approved chemical waste landfill (Baney, 1994).

Machine Tools

In 1994, EPA worked with a DOE field element to address the applicability of the Excluded PCB Product Rule to a "Cincinnati" machine lathe. The lathe had an oil reservoir, in which chemical analysis revealed PCBs at concentrations ranging from 6 to 7 ppm of Aroclor 1260. Analysis of PCBs in surface wipe samples showed concentrations ranging from 1.2 to 28 micrograms per 100 square centimeters. There was no information to indicate that the machine had used PCBs at 50 ppm or greater in the past. The DOE field element planned to (1) drain and incinerate the oil and (2) smelt the drained lathe. The issue raised by the field element was the extent to which the lathe was covered by the Excluded PCB Product Rule.

EPA (Baney, 1994) resolved for DOE that the machine did not qualify as an excluded PCB product because the results of the surface wipe samples exceeded 10 micrograms per 100 square centimeters, which is the regulatory equivalent of exceeding 50 ppm.

However, the controlling issue in this case was again the fact that the lathe was destined for disposal, not the applicability of the Excluded PCB Product Rule. (The other reason that the Excluded PCB Product Rule does not apply is because the lathe, in showing surface wipe samples exceeding the regulatory equivalent of 50 ppm, does not meet the criteria for an excluded PCB product.) Because the issue centered on disposal of the lathe, EPA (Baney, 1994) commented that the lathe may be disposed of by smelting.

EPA (Baney, 1994) also pointed out for DOE's benefit that if the lathe were to be sold, then the sale of the lathe would constitute distribution in commerce. Because distribution in commerce of PCBs is banned except for excluded PCB products and certain other specific items, the contaminated surface areas would have to be decontaminated to a level of PCBs below 10 micrograms per 100 square centimeters. If the concentration of PCBs on the surface of the lathe could be reduced to less than 10 micrograms per 100 square centimeter (i.e., what EPA considers as the equivalent of 50 ppm), then the lathe could be considered an excluded PCB product.

In an earlier letter (Baney, 1992), EPA advised that machine tools in which PCBs of 50 ppm or more were used at any time after July 1979 (the effective date of the PCB Ban Rule) are not authorized for use or distribution in commerce,

regardless of the current concentration of PCBs. Consequently, the machine tool owner must either:

- (1) Dispose of the machine tool according to 40 CFR 761.60, or
- (2) Petition EPA for an exemption from the ban on use or distribution in commerce.

The EPA letter (Baney, 1992) also pointed out that the existing regulations provide no servicing or decontamination authorization for machine tools containing 50 ppm or more of PCBs. The only provision that would allow draining, flushing, and refilling machine tools is 40 CFR 761.60(e), which allows persons to seek EPA approval for an alternative method of disposal.

In the same letter (Baney, 1992), EPA stipulates that machine tools with PCBs at less than 50 ppm may be used and distributed in commerce as long as (1) the concentration was less than 50 ppm prior to October 1, 1984, and (2) the concentration did not result from the dilution of material containing 50 ppm or more. These two stipulations are taken from the three criteria for an excluded PCB product. (The third criterion – legal use – was met and not an issue.)

Therefore, it is vitally important to know the use and testing dates, PCB concentration, and origin or history of the PCB concentration in order to apply the Excluded PCB Product Rule.

PCB-Painted Equipment

On February 4, 1997, EH-413 began working with the Savannah River Site (SRS) on determining the applicability of the Excluded PCB Product Rule to certain heavy metal-working equipment. The equipment consisted of about 75 items, including two large extrusion presses, lathes, welders, and ovens, plus spare parts. The equipment had been used to produce reactor fuel targets. Although the target-production mission had concluded, the equipment was still in good condition. SRS executed a contract to transfer the equipment to EFCO Corporation for reuse in a new manufacturing plant in Barnwell, South Carolina to make windows. The plant, scheduled to open in Fall 1997, would employ 1,000 to 1,300 workers five miles from SRS.

The equipment would play a critical role in reversing the economic downturn in the SRS area because SRS had lost nearly 10,000 jobs due to downsizing since 1993.

· During recent decontamination and deactivation (D&D) activities, samples were taken and analyzed for PCBs. Although sampling and analysis for PCBs in paint are not required, the engineer involved in the D&D activities at SRS was acquainted with a facility at the Idaho National Engineering and Environment Laboratory (INEEL) where PCBs at concentrations greater than 2 ppm had been found in building and equipment paint. Based on his experience, SRS incorporated PCB screening in the characterization of a similar facility scheduled for D&D. PCBs at >50 ppm were detected. Subsequently, SRS learned that the equipment items being offered for sale from another shutdown SRS facility fit a "profile" of typical uses of PCBs in paint. Following analysis of the paint on the SRS equipment, some pieces were found to have PCBs in paint at concentrations of more than 50 ppm. Oil that was used in the equipment was determined to have a PCB concentration of less than two parts per million. Therefore, PCBs in oil was not an issue. All of the sampled SRS equipment was procured before the enactment of TSCA.

· **Paint containing less than 50 ppm PCBs**

· SRS provided all of this information on PCB-containing paint to EPA Region IV and requested an interpretation as to whether the equipment showing less than 50 ppm of PCBs in the paint could be regarded as excluded PCB products. EPA Region IV verbally responded that 2 ppm of PCBs should be used as the regulatory threshold. Because the concentration of PCBs in the paint was above what EPA Region IV interpreted as the regulatory threshold, the Region also raised the issue of whether the equipment was legally used (e.g., used either pursuant to an authorization under EPA regulation, or an exemption petition granted by EPA). EPA Region IV stated that the matter had been discussed with the Office of Pollution Prevention and Toxics (OPPT) at EPA Headquarters (HQ).

· SRS was not sure whether EPA HQ had thoroughly considered all aspects of the issue of the applicability of the Excluded PCB Product Rule to PCB-painted equipment. Because of (1) the urgency in getting an official interpretation before May 10, 1997 (decision-making date to transfer the equipment), (2) EPA's rulemaking on PCBs (explained later), and (3) far-reaching consequences of the applicability of the Rule across the DOE complex, EH-41 worked with SRS in resolving the issue with OPPT at EPA HQ.

EH-41 and SRS arranged for a meeting with OPPT staff to discuss the issue. The meeting occurred at EPA HQ on April 24, 1997 with EH-41, SRS, and OPPT staff present and with EPA Region IV personnel on teleconference. SRS presented information on and pictures of the equipment. In particular, SRS gave details on the background for the transfer of the equipment, the history of the purchase and use of the equipment, the future owner of and use for the equipment, and sampling and analysis of the PCB paint.

SRS pointed out that PCBs in paint are a commonplace occurrence. PCBs in paint are not just an esoteric DOE or Department of Defense specification; they were used broadly for their exceptional heat and fire resistance properties. In 44 FR 31535 of May 31, 1979, EPA had recognized the widespread use of diarylide and phthalocyanine pigments (used in paints), both of which contain PCBs as an impurity. As a result, EPA authorized manufacture, processing, use, and distribution in commerce of these two pigments until January 1, 1982.

At the conclusion of the meeting, OPPT clarified that the DOE-to-EFCO contractual transfer of PCB-painted equipment is distribution in commerce of PCBs. However, OPPT interpreted that equipment with paint containing PCBs of less than 50 ppm could be considered excluded PCB products, and the Excluded PCB Product Rule could apply. In other words, the equipment with PCBs at less than 50 ppm in the paint could be used, sold, or otherwise distributed in commerce. EH-41 requested that OPPT confirm its interpretation in writing. OPPT provided a letter of confirmation (Melone, 1997) to EH-41 on May 12, 1997.

Paint containing 50 ppm or more PCBs

As far as the equipment with PCBs at 50 ppm or more in the paint was concerned, the Excluded PCB Product Rule, of course, does not apply. OPPT stated at the April 24, 1997 meeting that it would consider concurring on an enforcement discretion letter (EDL), which was requested by Odum (1977) and which was to be issued by Region IV. For the benefit of DOE, the EDL would allow sale of these items provided that there were data showing that PCB paint posed no unreasonable risk of harm to human health and the environment. OPPT indicated that if SRS could provide documentation and data on the sampling and analysis of PCBs in the paint as well as the site's paint specifications, it would help facilitate the EDL as well as the rulemaking that was in progress at the time.

· The rulemaking that was in progress pertains to
 · the “Mega-Rule” proposed December 6, 1994 at
 · 59 FR 62788. The proposed rule initially was to
 · provide for a new authorization at 40 CFR
 · 761.30(q) for the use of non-liquid PCBs at any
 · concentration (including PCB paint) for the
 · remainder of their useful life provided that such
 · use was in effect prior to July 2, 1979. DOE
 · worked with and convinced EPA to drop the
 · proviso concerning use prior to July 2, 1979
 · because of the (1) impracticability of establish-
 · ing the date of original use and (2) same mini-
 · mum level of risk is posed regardless of the
 · original date of use. Also, DOE is seeking to
 · add distribution in commerce of non-liquid
 · PCBs at any concentration to the new authoriza-
 · tion. (EPA is considering this request; however,
 · EPA’s likely response is that a class-wide
 · exemption will be granted for one year, which
 · will have to be renewed by DOE annually.)

· To support its request for the EDL, SRS submit-
 · ted test data on paint samples from the equip-
 · ment suspected of having PCB paint. The range
 · of PCB concentrations in the paint samples was
 · 0.6 ppm to 280 ppm. PCB wipe samples were
 · also taken. The PCB concentration in the surface
 · wipe samples ranged from non-detectable up to
 · a maximum of 4.6 micrograms per 100 square
 · centimeters.

· Because the surface wipe samples are definitely
 · below 10 micrograms per 100 square centime-
 · ters (which is the regulatory equivalent of 50
 · ppm) and the PCBs are in a solid, inert form,
 · EPA determined that the PCB-painted equip-
 · ment does not pose a dermal exposure hazard.
 · In addition, EPA took into account the fact that it
 · is not technically feasible to remove the PCB
 · paint from the equipment. Sandblasting the
 · paint from the equipment would be potentially
 · damaging and could render it unsuitable for its
 · intended use. Furthermore, there were no funds
 · provided for removing the paint even if it were
 · technically feasible to do so. Because final
 · action on promulgating changes to the PCB
 · regulations (“Mega-Rule”) were not completed
 · by the time that the equipment had to be
 · transferred, EPA determined that the exercise of
 · an EDL, for DOE’s benefit, was the only mecha-
 · nism available to address the situation.

· Based on these specific facts and circumstances,
 · EPA Region IV issued an EDL (Hankinson, 1997)
 · on June 10, 1997 indicating that it would not
 · bring enforcement action against DOE for the
 · distribution in commerce of equipment with
 · paint containing PCBs at more than 50 ppm.
 · Notwithstanding, EPA stipulated seven condi-
 · tions under which the EDL is effective:

- (1) The transferee (EFCO Corporation) retains operational control and responsibility for continued use and disposal of the equipment.
- (2) The equipment is transferred to only the specified sites; no further distribution in commerce is allowed except for purposes of disposal.
- (3) Upon installation, the PCB M_L mark shall be posted prominently; and upon expiration of the equipment’s useful life, the equipment shall be disposed of in accordance with 40 CFR Part 761.
- (4) The transferee shall conduct (a) quarterly inspections to ensure that the paint remains intact and (b) any necessary repair and remedial activities; the transferee shall maintain records of inspections, maintenance, repair, removal, and disposal of PCBs.
- (5) The transferee shall make available information on PCB health risks to workers.
- (6) The transferee shall certify annually that the terms and conditions of the EDL have been met.
- (7) The transferee shall submit the information required by (5) and (6) to EPA Region IV.

The EDL would expire 30 days after the effective date of the revisions to the PCB regulations (“Mega-Rule”).

Conclusion

This document discussed the teamwork between DOE and EPA to resolve issues concerning what materials constitute excluded PCB products and whether the Excluded PCB Product Rule applies. The specific materials discussed included electric wire and cable, machine tools, and PCB-painted equipment. In order to apply the Rule, it is important to know the activity (i.e., use, distribution in commerce, or disposal) in which the PCBs will be engaged, the concentration of PCBs, the testing dates, and the origin or history of the PCB concentration. If the Rule does not apply but the PCBs are non-liquid, a dispensation can be sought in the form of an EDL, as in the case of SRS. Furthermore, the anticipated incorporation of two exceptions for non-liquid PCBs (an authorization for use and an exemption for distribution in commerce) in the PCB “Mega-Rule” would allow the sale of surplus PCB-painted equipment saving DOE millions of dollars complex-wide. Instead of spending money to remove the PCB paint posing minimal risk, money would be returned to the U.S. Treasury because PCB-painted equipment could be sold as is.

References

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- Melone, J., 1997. Letter from EPA HQ,
· OPPT, National Program Chemicals Division,
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· that historic uses of items with paint containing
· less than 50 ppm PCBs may be regarded as
· excluded PCB products, May 12, 1997.
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Hankinson, J., 1997. Letter from EPA Region IV to Mario Fiori, DOE- Savannah River Site and Scott Beckwith, EFCO Corporation, regarding reuse and distribution in commerce of certain PCB items, June 10, 1997.

Questions of policy or questions requiring policy decisions will not be addressed in EH-413 Technical Assistance Projects unless that policy has already been established through appropriate documentation. Please refer any questions concerning the material covered herein to Beverly Whitehead, EH-413, (202) 586-6073.



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